

PSG COLLEGE OF ARTS & SCIENCE
(AUTONOMOUS)

MSc DEGREE EXAMINATION MAY 2019
(First Semester)

Branch - **BIOCHEMISTRY**

ENZYMES & ENZYME TECHNOLOGY

Time: Three Hours

Maximum: 75 Marks

SECTION-A (10 Marks)

Answer **ALL** questions

ALL questions carry **EQUAL** marks

(10 x 1 = 10)

- 1 An enzyme which is devoid of its either prosthetic group or co-enzyme is designates as
(i) holoenzyme (ii) apoenzyme
(iii) substrate (iv) coenzyme
- 2 TLCK is an analog of following enzyme.
(i) Renin (ii) Pepsin
(iii) Trypsin (iv) Chymotrypsin
- 3 Deficiency of thiamine leads to
(i) Pernicious anemia (ii) Beri Beri
(iii) Hemophilia (iv) Osteomalacia
- 4 Which of the following vitamins provides the cofactor for hydroxylation reactions in collagen synthesis?
(i) Biotin (ii) Niacin
(iii) Thiamin (iv) Vitamin C
- 5 The effect of non-competitive inhibition on a Lineweaver - Burk Plot is that
(i) it can move the entire curve to the right (ii) it can change they y-intercept
(iii) it can change the x-intercept (iv) No change
- 6 Trichoderma 3 - glucanase is reported to
(i) to stabilizemashing (ii) dextrans to glucose
(iii) starch to dextrin (iv) acts on maltose
- 7 An allosteric inhibitor of an enzyme usually
(i) binds to the active site (ii) participates in feedback regulation
(iii) denatures the enzyme (iv) causes the enzyme to work faster
- 8 By what factor chymotrypsin enhances the rate of peptide bond hydrolysis?
(i) 107 (ii) 108
(iii) 109 (iv) 106
- 9 The immobilized enzyme produced by micro encapsulation technique provides
(i) larger surface area (ii) smaller surface area
(iii) high amount of solvent (iv) low amount of solvent
- 10 For constructing the glucose sensor, w_ which of the following is used as gel?
(i) Urea (ii) Urease
(iii) Acrylamide (iv) Polyacrylamide

SECTION - B (35 Marks)

Answer **ALL** Questions

ALL Questions Carry **EQUAL** Marks (5 x 7 = 35)

- 11 a Give a note on active site determination by photo-oxidation.
OR
b Describe the determination of active site by modification using protease.
- 12 a Discuss the structure, functions and mechanism of action of THF coenzyme.
OR
b Justify the action of glutathione as coenzyme.
- 13 a Exemplify the irreversible enzyme inhibition with examples.
OR
b Describe the types of bisubstrate reactions with examples.
- 14 a What are allosteric enzymes? Discuss with examples.
OR
b Describe the mechanism of action of carbonic anhydrase.
- 15 a Explain calorimetric biosensors with its applications.
OR
b What are artificial enzymes? Explain.

SECTION - C (30 Marks)

Answer any **THREE** Questions

ALL Questions Carry **EQUAL** Marks (3 x 10 = 30)

- 16 How do you identify active site of enzyme using chemicals? Explain.
- 17 Discuss the structure and mechanism of ascorbic acid and vitamin K.
- 18 Derive MM Equation and explain the significance of V_{max} and K_m .
- 19 Describe the mechanism of lysozyme.
- 20 Enumerate the applications of immobilized enzymes.

Z-Z-Z

END